

197mm

Work Order ID 62181

Monday, September 20, 2010 11:27:05 AM

Page 1

Item ID: D3691-1

Accept

Revision ID:

Item Name: STUD

Start Date: 9/20/2010 Start Qty: ~~24.00~~ 11

Required Date: 10/1/2010 Req'd Qty: 24.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan: mpDate: 10-9-20

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3691

Rev D

100

0.00



BAND SAW

Bandsaw

Memo

0.00

Jeaspa Bandsaw

DO NOT USE CHOP SAW

☐ Cut blank 7.750" long

110

0.00



DOOSAN LATHE

Doosan

Memo

0.00

Doosan Lathe

1-Turn as per Folio FA716 Rev: 11 & Dwg D3691 Rev: 1 ☐ 2-Deburr

per dwg D3691

3-Check .625" bore with DT9530 GO/NO GO Gauge

160

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

11/3/22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 62181

Monday, September 20, 2010 11:27:05 AM

Page 2

Item ID: D3691-1

Accept

Setup Start

Revision ID:

Stop

Item Name: STUD

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Cust Item ID:

Required Date: 10/1/2010 Req'd Qty: 24.00

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170

QC8- Inspect parts - second check

0.00

QC

Memo

0.00

Quality Control

100% CHECK,CHECK ALL DIMENSIONS AND THREAD FIT

11-3-23

11

171

0.00

Purchasing

Memo

0.00

Purchasing

Liquid Penetrant Inspection as per QSI 038

Issue P/O: 13734

LPI as per dwg D3691

Attach copy of NDT results to work order

CL 11/03/29 11

173

Receive & Inspect for Damage & Mat'l Certs

0.00

Packaging

Memo

0.00

Packaging

11/3/29

W/O:		WORK ORDER CHANGES					
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Page 3

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Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

175

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

180

Identify as per dwg & Stock Location

0.00



Packaging

Memo

0.00

Packaging

190

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/3/31

MF

11-03-31

W/O:		WORK ORDER CHANGES					
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Picklist Print

Monday, September 20, 2010 11:27:05 AM

Page 1

Work Order ID: 62181



Parent Item: D3691-1



Parent Item Name: STUD

Start Date: 9/20/2010

Required Date: 10/1/2010

Start Qty: 24.00

Required Qty: 24.00

Comments: IPP Rev:A New Issue 08-01-29 JLM Veriified By:EC
IPP Rev:B Material Change 09-01-07 JLM Verified By:EC IPP
REV:C AS PER REV D 10-03-16 JLM VERIFIED BY:EC
IPP Rev:C Added note on Step 2 09-01-26 JLM Verified By:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M174PH-H900R1.000		Purchased	No				f	11.6200	0.73	17.52876			
17-4SS H900 ROUND BAR 1.00													

Location

MAT030

112570

Loc Qty

11.62

11.62

Loc Code

8.5 HZ

8.5 HZ 2/10/3/21

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D 205-770-011

Status	Item ID	Rev	Name	Start Date	Quantity	UOM	Proj Date	Sec	Crp	Up	Quam	meind	N:C	ILCX	ISort	me	Offse	in	Ty1	Per	Cch	to	fore	Cs	Last	Id	Da
	AN3C12A		Bolts	1/1/2008	4.0...	Ea		110	0	0.0...						4	0	M...							12/...	1...	
	D3684-043		MOUNT ASSEMBLY	12/5/2009	1.0...	Ea		110	0	0.0...						1	0	M...							12/...	1...	
	D3684-045		LEG ASSEMBLY	12/5/2009	1.0...	Ea		110	0	0.0...						2	0	M...							12/...	1...	
	D3685-041		BIPOD MOUNT AS...	12/5/2009	1.0...	Ea		110	0	0.0...						6	0	M...							12/...	1...	
	D3686-041		MONOPOD ASSE...	12/5/2009	1.0...	Ea		110	0	0.0...						7	0	M...							12/...	1...	
	D3692-1		SPACER	12/5/2009	4.0...	Ea		110	0	0.0...						3	0	M...							12/...	1...	
	MS21043-3		Nut	1/1/2008	2.0...	Ea		110	0	0.0...						5	0	M...							12/...	1...	

D3684-047 x 2

- D3688-1.
- D3689-1
- D3691-1.
- D3692-1. x 4.
- D3693-1.

D3684-049 x 2

- D3688-3
- D3689-1
- D3691-1.
- D3692-1 x 4
- D3693-1

D3684-043

- D3684-047
- " " -049
- D3687-1
- D3692-1 x 8

D3684-045

- D3688-5.
- D3689-1
- D3691-1.
- D3692-1.
- D3693-1

D3685-041

- D3684-047
- " " -049
- D3687-3
- D3692-1

D3686-041

- D3688-7
- D3689-1.
- D3691-1.
- D3692-1
- D3692-3
- D3693-1.
- D3693-3

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NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 62181
Description: Stud		Part Number: D3691-1
Inspection Dwg: D3691	Rev: D	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.695	+/-0.010	Ø 705	/			SA 9
45°	0.5°	45°	/			
0.625	+0.004/-0.000	0.627	/			
1.25	+0.000/-0.03	1.230	/			
118°	0.5°	118°	/			
R0.03	+/-0.030	R.032	/			
Ø.11 Ref	+/-0.030					Ref
90°	0.5°	90°	/			
Ø0.189	+0.005/-0.001	Ø.151	/			
1.31	+/-0.030	1.31	/			
1.65	+/-0.030	1.65	/			
0.750	+0.000/-0.010	0.752	/			
Ø0.659	+0.000/-0.015	Ø.650	/			
7.625	+/-0.015	7.631	/			SA-05
2.90	+/-0.030	2.930	/			
3/4-16UNF-2A	N/A		/			
0.075 x 45°	+/-0.010 x 0.5°	0.075 x 45°	/			
0.375	+0.000/-0.010	0.372	/			
Ø0.189	+0.005/-0.001	Ø.151	/			
R0.25	+/-0.030	R.25	/			
R0.50	+/-0.030	R.50	/			

Measured by: 	Audited by: 	Prototype Approval:	N/A
Date: 11/3/23	Date: 11.3.23	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	09.05.11	New Issue	KJ	
B	09.11.04	Dwg Rev updated	KJ	
C	10.03.31	Dimensions revised per Dwg Rev D	KJ	

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

8

7

6

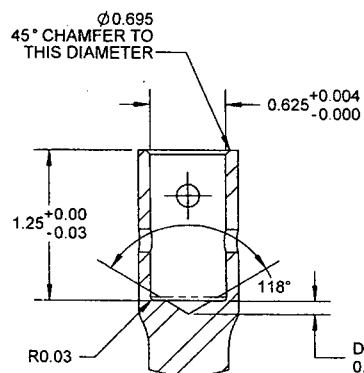
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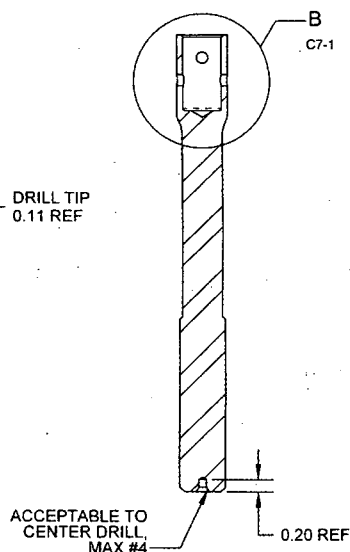
3

2

1



DETAIL B
SCALE 2X
C6-1



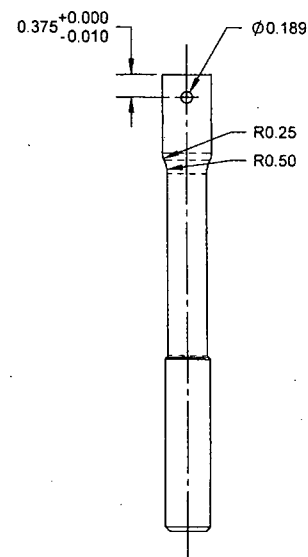
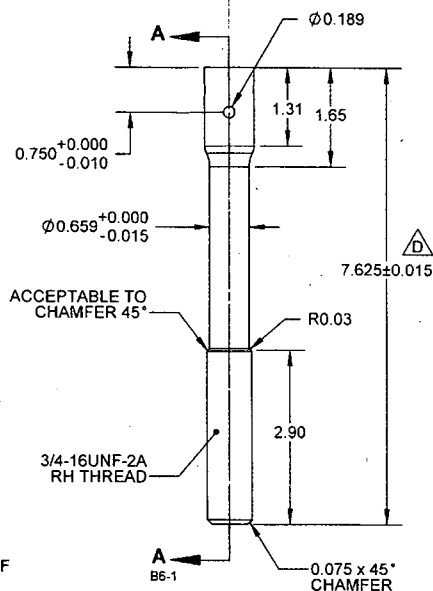
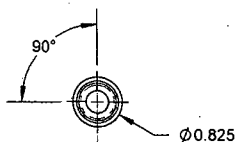
SECTION A-A

D4-1

D3691-1 STUD

NOTES:

- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.81 lb
- 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)



RELEASED
2010-03-15

D	7.625 WAS 7.750 (ZN C4-1)	RF	10.03.03
C	0.20 WAS 0.16 & CENTER DRILL #4 WAS CENTER DRILL #2 (ZNB5-1); UPDATE NOTE 8 TO REF QSI (ZN A8-1)	RF	09.09.09
B	CHANGE TO 17-4PH H-900(ZN A8-1); 0.695 WAS 0.665 (ZN D8-1); REFORMATTED TO CURRENT DWG	RF	08.11.24
A	NEW ISSUE	RF	08.03.12
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO.	REV. D
MFG. APPR.	RF	D3691	SHEET 1 OF 1
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	STUD	NTS
DATE	10.03.03	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspect

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NOTE: Date & initial all entries



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO13734

Purchase Order Date 3/29/2011

PO Print Date 3/29/2011

Page Number 1 of 2

Order From :

VC-ACU002

ACUREN
2190 SPEERS ROAD
OAKVILLE, ON L6L 2X8
CA

Contact Name

Vendor Phone

613 931 1261

Vendor Fax

613 931 2777

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

10127-2607

Tax Resale Nbr

Net 30

Terms

Currency

CAD

FOB

Destination-Collect

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAKED
08/10/2011

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	62181	D3691-1 STUD	3/29/2011 Yes	11.00	Yours ppd	\$7.7272	\$85.00
		Special Inst:	LIQUID PENETRANT INSPECTION AS PER QSI 038 OR LPI AS PER ASTM 1417 LEVEL 2				
2	67351	D212-664-101 CROSSTUBE	3/29/2011 Yes	1.00	Yours ppd	\$85.0000	\$85.00
		Special Inst:	AS ABOVE				
3	67352	D212-664-101 CROSSTUBE	3/29/2011 Yes	1.00	Yours ppd	\$85.0000	\$85.00
		Special Inst:	AS ABOVE				

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required when applicable

Change Nbr: 1

Change Date: 3/29/2011



LIQUID PENETRANT TEST REPORT

P- 12232.

PAGE 1 OF 1

CLIENT DART AeroSpace DATE March-29-2011 TIME AM ☒ PM ☐
ATTENTION LINDA LACELLE ACUREN JOB No. 188-11-02066
ADDRESS 1270 BELDEEN ST. PO/WO No. -
HAWKESBURY ON. WORK LOCATION HAWKESBURY
KGA 1K7 ACCEPTANCE STD. ASTM 1417/031-038 REV./DATE 2005
PROJECT F.P.T. ON MACHINED STUDS
ITEM(S) EXAMINED 11

JOB DESCRIPTION PROCEDURE No. LT-002 REV./DATE 2008 TECHNIQUE No. LT-002 REV./DATE 2008
PART No. - MATERIAL STAINLESS STEEL THICKNESS VARIOUS
SCOPE WET FLUORESCENT LIQUID PENETRANT INSPECTION
CARRIED OUT ON 100% EXTERNAL SURFACE

TEST DETAILS

METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
FAMILY BRAND MAGNA FLUX BLACK LIGHT S/N 10454 ☒ OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 2 fc
PENETRANT 2-L-67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER H₂O MINIMUM DRY TIME >10 MIN. OTHER LASINO
DEVELOPER SKD52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N 1098866 CAL DUE DATE OCT-18
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY 2011

TEST SURFACE

SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE METAL
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/50°F ☐ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- (☐ METRIC ☐ IMPERIAL)

11 STUDS: W.O. 62181 ✓
S-1107/75

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE Zan Lley DTR # E-63781
TECHNICIAN (SIGNATURE): M. K. J. HARTON REPORT REVIEWED BY:
NAME (PRINT): M. K. J. HARTON NAME INITIALS
1ST TECHNICIAN 2ND TECHNICIAN
CGSB LEVEL II SNT LEVEL II CGSB LEVEL II SNT LEVEL II
CGSB REG. No. 6606 CGSB REG. No. 6606